

Extracts from the Proceedings of the Academy of Natural Sciences of Philadelphia, of papers,  
by ISAAC LEA.

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*Description of four New Species of Exotic UNIONES.*

By ISAAC LEA.

[Read May 13th, 1856.]

UNIO COLORADOENSIS. Testā lævi, ellipticā, inflatā, valdē inæquilaterali; valvulis crassis; natibus elevatis magnisque; epidermide luteo-castaneā, obscurè radiatā et politā; dentibus cardinalibus magnis, duplicitis, acuminatis crenulatisque; lateralibus magnis prælongis, lamellatis subcurvisque; margaritā purpureā et iridescente.

*Hab.* Rio Colorado, Texas. B. W. Budd, M. D.

UNIO NUTTALLIANUS. Testā lævi, ellipticā, subinflatā, inæquilaterali; valvulis tenuibus; natibus prominulis; epidermide olivaceā, eradiatā, valdē politā; dentibus cardinalibus parvis, rectis, compressis crenulatisque; lateralibus subcurtis, subrectis lamellatisque; margaritā salmonis colore tinctā et iridescente.

*Hab.* India. Prof. Thomas Nuttall.

UNIO CAMBODIENSIS. Testā lævi, ellipticā, subinflatā, inæquilaterali; valvulis subtenuibus; natibus prominentibus, ad apicem undulatis; epidermide castanea, eradiatā, politā; dentibus cardinalibus longis, rectis lamellatisque; lateralibus sublongis, lamellatis subrectisque; margaritā albā et iridescente.

*Hab.* Takrong river at Korat, Cambodia. S. R. House, M. D.

UNIO NEWCOMBIANUS. Testā corrugato-sulcatā, rotundatā, subcompressā, inæquilaterali; valvulis crassis; natibus elevatis prominentibusque; epidermide tenebroso-olivaceā, corrugatā; dentibus cardinalibus submagnis, duplicitis subcompressisque; lateralibus subbrevisbus, crassis subcurvisque; margaritā albā.

*Hab.* Lake Nicaragua. W. Newcomb, M. D.

*Description of Thirteen New Species of Exotic PERISTOMATA.*

By ISAAC LEA.

[Read June 3d, 1856.]

*PALUDINA HAINESIANA.* Testâ ventricoso-conoideâ, subglobosâ, ponderosâ, solidâ, viridi-palidâ, arctissimè umbilicatâ, lævi; spirâ obtusâ, ad apicem carneâ; suturis valdè impressis; anfractibus senis, convexis, ultimo amplio; aperturâ magnâ, subrotundatâ, intus albidâ; columellâ albâ, crassâ, incurvatâ.

*Hab.* Siam. S. R. House, M.D.

*PALUDINA UMBILICATA.* Testâ carinatâ, obtusè conoideâ, viridi-brunneâ, sub-tenui, umbilicatâ, lævi; spirâ obtusâ, babylonicâ; suturis linearibus; anfractibus senis, carinatis, supernè planulatis; aperturâ subrotundatâ, intus albidâ; umbilico spiraliter carinato; columellâ incurvatâ.

*Hab.* Takrong River, Siam. W. A. Haines.

*PALUDINA CHINENSIS.* Testâ carinatâ, pyramidatâ, rufo-castaneâ, subcrassâ, arctissimè umbilicatâ, striatâ; spirâ elevatâ; suturis impressis; anfractibus septenis, planulatis, in medio carinatis, supernè geniculatâ; aperturâ subrotundâ, incurvatâ; labro angulato.

*Hab.* China. W. A. Haines.

*PALUDINA SWAINSONIANA.* Testâ globosâ, subsolidâ, tenebroso-viridi, arctissimè umbilicatâ, lævi; spirâ obtusâ; suturis valdè impressis; anfractibus instar quinis, convexis; aperturâ rotundatâ, intus albidâ.

*Hab.* Siam. T. R. Ingalls, M. D.

*PALUDINA INGALLSIANA.* Testâ carinatâ, obtusè conoideâ, tenebroso-viridi, tenui, umbilicatâ, nitidâ; spirâ obtusâ; suturis linearibus, anfractibus senis, subplanulatis, minutissimè et transversè striatis; aperturâ rotundato-ellipticâ, infernè subangulatâ, intus coeruleo-albâ.

*Hab.* Siam. T. R. Ingalls, M.D.

*BITHINIA SIAMENSIS.* Testâ ovato-concoideâ, palido-olivaceâ, tenui, diaphanâ, nitidâ, lævi, arctissimè umbilicatâ; spirâ subelevatâ; suturis linearibus; anfractibus instar senis, convexis; aperturâ ovato-rotundatâ, incrassatâ, supernè angulatâ, intus albidâ.

Operculo calcareo, extrinsecus striis concentricis, intus granulato.

*Hab.* Takrong River, Siam. S. R. House, M.D.

*BITHINIA GLOBULA.* Testâ globosâ, palido-olivaceâ, tenui, diaphanâ, lævi, imperforatâ; spirâ depressâ, ad apicem obtusâ; suturis impressis; anfractibus

quaternis, ventricosis; aperturâ rotundatâ, incrassatâ, subreflexâ, supernè angulatâ, intus albidâ; columellâ incrassatâ.

Oporculo calcareo lævi, marginatâ.

*Hab.* India. W. A. Haines.

**PALUDOMUS MACULATA.** Testâ ovato-conicâ, virido-luteâ, brunneo-maculatâ, crassâ, imperforatâ, lævi; suturis valdè impressis; anfractibus instar quinis, convexis; aperturâ subrotundâ, intus albâ; columellâ per albâ, callosâ.

*Hab.* Ahmednugger, India. S. Shurtleff, M. D.

**AMPULLARIA AUROSTOMA.** Testâ subglobosâ, luteâ, transversim vittatâ, crassâ, arctè perforatâ, lævi; spirâ obtusâ; suturis vix profundis; anfractibus instar senis, convexis; aperturâ rotundo-ellipticâ, subreflexâ, intus aurantiâ et obsoletè vittatâ; umbilico arctè compresso; columellâ crassâ.

Opercuso corneo, pellucido, subtriaugulari.

*Hab.* Carthagena. Col. Totten and J. C. Trautwine, Esq.

**AMPULLARIA TUBÆFORMIS.** Testâ elongato-globosâ, tenebroso-fuscâ, transversim vittatâ, tenui, pellucidâ, latè umbilicatâ, lævi; spirâ emersâ; suturis valdè profundis; anfractibus instar quinis, valdè convexis; aperturâ magnâ, subrotundâ, dilatatâ, luteo-albidâ, intus brunneo-vittatâ; umbilico magno; columellâ subcallosâ.

*Hab.* —? M. Burrough, M. D.

**AMPULLARIA GRACILIS.** Testâ regulariter ellipticâ, luteo-olivaceâ, transversim pervittatâ, subtenui, arctè umbilicatâ, lævi, nitidâ; spirâ emersâ; suturis paulisper impressis; anfractibus instar senis, subconvexis; aperturâ ovatâ, intus tenebroso-brunneâ et obsoletè vittatâ; labio acuto; umbilico arctè compresso; columellâ lævi.

*Hab.* Siam. S. R. House, M. D.

**AMPULLARIA TURBINIS.** Testâ turbinatâ, luteo-viridi, transversim vittatâ, subcrassâ, imperforatâ, lævi; spirâ valdè depresso; suturis paulisper impressis; anfractibus instar quinis, valdè convexis; aperturâ pergrandi, elongato-ovatâ, vel albâ vel luteâ, intus vittatâ; labio acuto; columellâ valdè incurvatâ et incrassatâ.

*Hab.* Siam. S. R. House, M. D.

**ASSIMINEA CARINATA.** Testâ regulariter conicâ, luteâ, vittatâ, subcrassâ umbilicatâ, lævi; spirâ ad apicem acutâ; suturis paulisper impressis, infrâ lineatis; anfractibus instar septenis, planulatis; aperturâ ellipticâ, subcanaliculatâ, intus vittatâ; umbilico spiraliter carinato; columellâ incurvatâ ad basim subangulatâ.

*Hab.* Siam. S. R. House, M. D.

*Description of Fifteen new species of Exotic MELANIANA.*

By ISAAC LEA.

[Read July 8th, 1856.]

MELANIA VERREAUIANA. Testā lævi, pyramidatā, crassā, tenebroso-castaneā, spirā valdè elevatā; suturis linearibus; anfractibus planulatis; aperturā subgrandi, ovatā, intus paulisper brunneā; columellā albā incurvāque.

*Hab.* Sandwich Islands. E. Verreau, Paris.

MELANIA FRATERNA. Testā plicatā, pyramidatā, subcrassā, tenebroso-brunneā; spirā elevatā; suturis irregulariter impressis; anfractibus subplanulatis, transversim lineis impressis, regulariter cinctis, costellis verticalibus; aperturā parvā, subovatā, intus albidā; labro acuto; columellā contortā, supernè incrassatā, infernè subemarginatā.

*Hab.* ——.

MELANIA HAINESIANA. Testā lævi, pyramidatā, subtenui, corneā; spirā subelevatā; suturis linearibus, impressis; anfractibus planulatis, in medio angulatis; aperturā subgrandi, subrhomboideā, ad basim angulatā, intus cœruleo-albidā; labro acuto, angulato; columellā albidā tortāque.

*Hab.* India. W. A. Haines.

MELANIA HOUSEI. Testā lævi, acuto-conoideā, tenui, corneā, flammis longitudinalibus ferrugineis ornatā; spirā subelevatā; acuminatā, suturis impressis, canaliculatisque; anfractibus planulatis, instar duodecim; aperturā parvā, ovatā, intus albidā; columellā albā tortāque.

Operculo tenebroso-fusco.

*Hab.* Korat, Takrong River, Siam. S. R. House, M. D.

MELANIA NINGPOENSIS. Testā perplicatā, striis transversis crebris decussatā, conoideā, tenui, pallidā corneā, subdiaphanā; spirā subelevatā; suturis valdè impressis; anfractibus instar novem, subconvexis, infernè transversim costatis; aperturā parvā, subrotundatā, intus albā; columellā albā.

Operculo tenui, pallido-corneo.

*Hab.* Ningpo, China. S. R. House, M. D.

MELANIA MYERSIANA. Testā plicatā, conoideā, tenui, diaphanā, rufo-corneā; spirā subelevatā; suturis impressis; anfractibus instar octo, subconvexis, striis exilissimus impressis; aperturā ovatā, supernè angulatā, ad basim unifasciatā; labro acuto; columellā albidā.

*Hab.* Fegee Islands. S. R. House, M. D.

*MELANIA BULLATA.* Testâ striatâ, obtuso-conoideâ, valdè inflatâ, crassâ, nigrâ ; spirâ curtâ, truncatâ ; suturis paulisper impressis ; anfractibus convexis, striis transversis subdistantibus, impressis ; aperturâ grandi, subovatâ, supernè angulatâ et incrassatâ, intus albidâ ; labro acuto ; columellâ incurvâ tortâque.

*Hab.* Brazil. W. A. Haines.

*MELANIA LYRÆFORMIS.* Testâ plicatâ, conoideâ, subcrassâ, tenebroso-fuscâ ; spirâ curtâ ; suturis irregulariter impressis ; anfractibus convexiusculis, supernè regulariter costatâ, infernè transversim striatâ ; aperturâ parvâ, ellipticâ, intus albidâ ; labro acuto ; columellâ incurvâ tortâque.

*Hab.* Manilla. W. Newcomb, M. D.

*MELANIA AFFINIS.* Testâ crebri-striatâ, conoideâ, subtenui, tenebroso-fuscâ ; spirâ subelevatâ ; suturis impressis ; anfractibus convexis, ad apicem plicatâ ; aperturâ parvâ, ellipticâ, intus albidâ ; labro acuto ; columellâ lævi incurvâque.

*Hab.* Manilla. W. Newcomb, M. D.

*MELANIA AUSTRALIS.* Testâ crebri-plicatâ, attenuatâ, tenui, nigracanti ; spirâ elevatâ ; suturis impressis ; anfractibus planulatis, supernè canaliculatis ; aperturâ parvâ, ellipticâ, supernè obtuso-angulatâ, intus tenebrosâ ; labro-acuto ; columellâ albâ tortâque.

*Hab.* Manilla. W. Newcomb, M. D.

*MELANIA NEWCOMBII.* Testâ striatâ, acuto-conoideâ, tenui, corneâ ; spirâ subelevatâ ; suturis impressis canaliculatisque ; anfractibus instar novem, subconvexus, striis exilissimis impressis ; aperturâ parvâ, ellipticâ, intus albidâ ; labro acuto ; columellâ albidâ.

Operculo tenebroso-fusco.

*Hab.* Oahu, Sandwich Islands. W. Newcomb, M. D.

*MELANIA MAUIENSIS.* Testâ cancellatâ, infernè transversè striatâ, conoideâ, acuminatâ, subcrassâ, corneâ ; spirâ elevatâ ; suturis irregulariter impressis ; anfractibus denis, planulatis, ad apicem crebri plicatâ ; aperturâ grandi, ovatâ, supernè angulatâ, intus cœruleâ albâ ; labro expanso, acuto ; columellâ tortâ.

*Hab.* Maui, Sandwich Islands. W. Newcomb, M. D.

*MELANIA BONINENSIS.* Testâ cancellatâ, conoideâ, tenui, tenebroso-corneâ ; spirâ subelevatâ ; suturis paulisper impressis ; anfractibus planulatis, instar septenis ; aperturâ parvâ, ovatâ, supernè angulatâ, intus albidâ ; labro acuto ; columellâ tortâ.

*Hab.* Bonin Islands. M. Burrough, M. D.

*MELANIA RUBIDA.* Testâ striatâ, conicâ, crassâ, ferrugineâ ; spirâ subelevatâ, acuminatâ ; suturis impressis ; anfractibus undenis, planulatis, ultimo inflatis,

ad apicem carinatis; aperturâ subgrandi, rotundâ, intus rubicundulâ; labro acuto; columellâ incrassatâ.

*Hab.* Mexico. Hon. J. R. Poinsett.

PACHYCHILUS PARVUM. Testâ striatâ, obtuso-conoideâ, crassâ, ferrugineâ; spirâ curta; suturis impressis; anfractibus senis, convexis, striis transversis exilissimis impressis; aperturâ grandi, subrotundâ, intus albâ; labro expanso, valde incrassato; columellâ incrassatâ.

Operculo diaphano, elliptico.

*Hab.* Siam. S. R. House, M. D.

*Description of the Byssus in the genus UNIO.*

By ISAAC LEA.

[Read September 23d, 1856.]

Professor Kirtland published in the American Journal of Science for July, 1840,\* some observations he had made on the anatomical and physiological characters of the *Naiades*, and was the first a few years before to have noticed, that at least some species of *Unio*, when very young, were anchored to some foreign substances by "a small silky filament" attached to the foot. I had casually observed the fact in a single instance, in *Unio complanatus* from the Schuylkill, but had not the opportunity of again witnessing it. The Professor followed up his discovery at different periods, and found thus attached the young of the following species; viz., *zigzag*, *elegans*, *dehiscens*, *ebenus*, *crassus*, *foliatus*, *pyramidalis*, *crassidens* and *gibbosus*.

The fact at the time was considered of great interest, and it was very much desired that further observations should have been made. Nothing has, however, to my knowledge, been since published in connexion with the subject, neither in this country nor in Europe. M. D'Orbigny discovered in the Rio Parana, South America, a very remarkable fresh water bivalve, which he named *Byssanodonta Paranensis*, (Voy. dans l'Amerique Merid.) This always remains attached by a *byssus*, proceeding from the foot. It has anterior and posterior adductor muscles.

In the examination of the soft parts of a very large number of species of this family, from Georgia, which I have been enabled to do through the kindness of Bishop Elliott, I have noticed in the *adults* of two small species, a perfect *byssus* attached to the lower portion of the foot, posterior to the base.

In dissecting five specimens of *Unio acutissimus*, nobis, from Etowah River, Georgia, I found in a full grown specimen, one and a quarter inches wide, a large fine *byssus*, fully an inch in length, thicker than a horse hair, quite flattened, semitransparent, and without any appearance of fibre, but rather hornlike. At the point of insertion in the foot, the filament is a little enlarged and rounded, and there is also at the same point the rudiment or remains of a second one. The other extreme end of this filament, where it was attached to the foreign substance to which the animal had anchored itself, is evidently perfect, shewing the true length of the *byssus*. At this end it is divided into four branches, undoubtedly having been attached. Of the five specimens before me, one only has the *byssus* remaining; but it is evident, from the fact that each of the others has a

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\* Page 167 figs. *a* and *b*.

longitudinal cicatrix at the point of the former attachment, that every one had been furnished with a *byssus*.

I found also that the same kind of *byssus* existed in the *adult* of the closely allied species, *Unio Conradius*, nobis, which accompanied the above from the same locality. There are three of this species, one of which has a portion of the *byssus* attached in the same manner, but evidently broken off and not being more than the fourth of an inch long. This filament is much more delicate than that described above, not being thicker than a human hair. It is not flattened, but rounded. Close to its insertion in the foot is a second one, shorter, and probably the remains of a separate filament of attachment, the genus *Pinna* having innumerable fine threads of attachment, the shell itself of one species being sometimes found more than two feet in length.

In all the eight specimens of the two *Uniones* above mentioned, the impressed cut or cicatrix made by the *byssus* is very observable, so that there cannot remain a doubt, but that they had all been attached until they had arrived at adolescence.

As part of these were no doubt anchored when taken from the water, and part of them free and locomotive, it appears that it cannot be necessary to their existence that they should retain their normal condition of attachment.

There are other allied species, forming with these a group, of which *acutissimus* is the type, which I have not had the advantage of examining; but I have no doubt that those will all be found to be also anchored by a *byssus*, in the same manner.

These facts will I hope draw the attention of the Zoologist more closely to observe the habits of this family.

*Descriptions of eleven New Species of Exotic UNIONES, from Georgia.*

By ISAAC LEA.

[Read Nov. 4th, 1856.]

**UNIO ELLIOTTII.** Testā grandē plicatā, subquadratā, inflatā, valdē inaequilaterali; valvulis percrassis; natibus prominentibus, tumidis; epidermide nigra, nitida; dentibus cardinalibus permagnis, duplicitis; lateralibus crassis, longis, lamellatis subcurvisque; margaritā argenteā et iridescente.

*Hab.* Othcalooga Creek, Gordon Co., Georgia. Bishop Elliott.

**UNIO GRACILIOR.** Testā ləvi, ellipticā, inflatā, inaequilaterali; valvulis tenuibus; natibus prominulis; epidermide tenebroso-fuscā, obsoletē radiatā et nitida; dentibus cardinalibus compressis erectisque; lateralibus lamellatis, longis subcurvisque; margaritā albidā et valdē iridescente.

*Hab.* Buckhead Creek, Burke Co., Georgia. Bishop Elliott.

**UNIO PULLATIS.** Testā ləvi, transversā, inflatā, valdē inaequilaterali; valvulis crassis; natibus prominulis; epidermide tenebroso-nigra; dentibus cardinalibus curtis, crassis, duplicitibus; lateralibus crassis, longis subrectisque; margaritā vel purpureā vel salmonis colore tinctā et iridescente.

*Hab.* Creeks near Columbus, Georgia. Bishop Elliott.

**UNIO FAVOSUS.** Testā ləvi, subtriangulari, subcompressā, inaequilaterali; positiōe subangulatā; valvulis subcrassis; natibus prominulis, ad apices undulatis; epidermide luteo-olivaceā, virido-maculatā; dentibus cardinalibus magnis, erectisque; lateralibus crassis, sublongis subrectisque; margaritā argenteā et valdē iridescente.

*Hab.* Othcalooga Creek, Gordon Co., Georgia. Bishop Elliott.

**UNIO RUTILANS.** Testā ləvi, ellipticā, inflatā, valdē inaequilaterali, in medio ad basim paulisper compressā; valvulis tenuibus; natibus prominulis; epidermide luteo-viridi et valdē radiatā; dentibus cardinalibus parvis, compressis, duplicitibus; lateralibus praelongis, lamellatis subcurvisque; margaritā cæruleo-albā et valdē iridescente.

*Hab.* Othcalooga Creek, Gordon Co., Georgia. Bishop Elliott.

**UNIO ERRANS.** Testā ləvi, oblongā, compressā; valdē inaequilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscā, obsoletē radiatā; dentibus cardinalibus parvis, compressis; lateralibus praelongis, lamellatis subrectisque; margaritā vel purpureā vel salmonis colore tinctā et iridescente.

*Hab.* Tobesaukie Creek, near Macon, Georgia. Bishop Elliott.

**UNIO VICINUS.** Testā lævi, oblongā, compressā, inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide virido-fuscā, obsoletè radiatā; dentibus cardinalibus parvis, acuminatis compressisque; lateralibus longis subcurvisque; margaritā argenteā et valdē iridescente.

*Hab.* Swift Creek, near Macon, Georgia. Bishop Elliott.

**UNIO SUBELLIPSIS.** Testā lævi, ellipticā, inflatā, inæquilaterali, ad basim rotundā; valvulis crassis; natibus subprominentibus; epiderme tenebroso-brunneā, politā, radiatā; dentibus cardinalibus brevibus, tumidis, subelevatisque; lateralibus prælongis subrectisque; margaritā argenteā et iridescente.

*Hab.* Creeks near Columbus, Georgia. Bishop Elliott.

**UNIO GEMINUS.** Testā lævi, ellipticā, inflatā, inæquilaterali; valvulis crassis; natibus prominulis; epidermide tenebroso-castaneā, obsoletè radiatā, ad umboes politā; dentibus cardinalibus magnis, acuminatis, duplicibus; lateralibus longis, crassis subcurvisque; margaritā purpureā et iridescente.

*Hab.* Buckhead Creek, Burke Co., Georgia. Bishop Elliott.

**UNIO ROSTRIFORMIS.** Testā lævi, valdē transversā, compressā, at latere planulatā, valdē inæquilaterali, posticē acutē acuminatā; valvulis tenuibus; natibus vix prominulis, ad apices undulatis; epidermide tenebroso-fuscā, obsoletè radiatā, dentibus cardinalibus parvis, acuminatis, duplicibus; lateralibus prælongis, lamellatis rectisque; margaritā subpurpureā et iridescente.

*Hab.* Swift Creek, near Macon, Georgia. Bishop Elliott.

**UNIO BLANDIANUS.** Testā tuberculatā, quadratā, inflatā, subinæquilaterali, posticē truncatā et emarginatā, ad basim emarginatā, in medio sulcatā; valvulis percrassis; natibus prominentibus, incurvis, ad apices rugoso-undulatis; epidermide tenebroso-castaneā; dentibus cardinalibus crassissimis, crenulatis, duplicibus; lateralibus brevibus, percrassis rectisque; margaritā argenteā et iridescente.

*Hab.* Othcalooga Creek, Gordon Co., Georgia. Bishop Elliott.

*Remarks on TRIQUETRA CONTORTA.*

BY ISAAC LEA.

(Communicated Dec. 16th, 1856.)

Mr. Lea mentioned that, in describing a new species of *Triquetra*, Klein. (*Hyria*, Lam.) in April last, (Proceedings, vol. viii. p. 79,) he had but a single valve, which had the appearance (as stated in his remarks not yet published) of being twisted like *Arca tortuosa*, Lin. This extraordinary form, which had never been suspected to exist in any member of the family *Naïades*, excited great interest with the Zoologists who saw it; but it was still a matter of doubt whether the curve, although exceedingly regular and presenting no appearance of constraint or injury, might not be abnormal. This doubt has now, however, been put entirely at rest, for the curve of both specimens is so precisely the same, that when the odd right valve is placed against the left of the other, they fit perfectly, proving that the curve is a mathematical law belonging to the species. He exhibited to the Society a complete adult specimen, which H. Cuming, Esq., of London, sent him for inspection and to be figured. The species was recognized by Mr. Cuming on his visit here recently, at once to be the same as that in his cabinet, and he promptly and liberally offered to place this unique specimen in Mr. Lea's hands, for a more perfect description and figure than could be given of the single immature valve he already had. Mr. Cuming's specimen is quite six inches along the dorsal line to the angle of the posterior margin, and this line deflects quite two inches in the course of the six inches from a straight line, and it is so twisted that the basal margin at the posterior end turns up to be on a plane with the dorsal line at the beaks. This remarkable curve causes the long lateral teeth to have a curve of double curvature. The greatest distance from the dorsal to the basal margin is one inch and three-tenths. The greatest diameter is nine-tenths of an inch, which gives it a sub-cylindrical form, and it is not unlike a twisted banana, (*Musa sapientum*.) This perfect specimen presents the superior portion of the valves covered with small, regular tubercles, which was not suspected in the original, somewhat imperfect single valve; there being on it only a few irregular undulate markings. Mr. Cuming's specimen settles the doubt as to habitat. He received his from Shanghai, and therefore Mr. Fitch and Dr. Ingalls, to whom Mr. Lea owes the possession of the single valve, were right in assigning it to China. Doubts arose of this from the fact that, heretofore, *Triquetra* has been considered to be confined to South America. Mr. Lea stated that he proposed the name should be changed from that he originally had given it, (*T. lanceolata*), as inappropriate to the complete mature shell. He proposed that of *contorta*, which is very descriptive, and can never be mistaken.

*Remarks on the Visual Organs of the NAIADES.*

By ISAAC LEA.

(Communicated Feb. 3d, 1857.)

Mr. Lea stated that he had at various times paid a good deal of attention to the habits and forms of the NAIADES of our own country, and for that purpose frequently had them for long periods in a living state under his observation. Their condition as to special sense has been of great interest, and particularly those of *touch, hearing and sight*. In the course of these investigations, it became evident to him that some species of *Unio* were *sensitive to light*, and he found one species (*Unio radiatus*) very eminently so. He stated that he was not aware of its ever having been suggested that any of the family were possessed of organs of sight, even in a young state, as in the case of the young of *Mytilus edulis*. It is well known that some of the Molluscs have large and perfect eyes, while some others have imperfect ones, but generally they are altogether devoid of the optic nerve. The *Strombidae* are said to possess an eye highly organized, but in most of the *Gasteropoda* it is of a more simple structure, and perhaps only possesses sensibility of light without the power of distinct vision. The terrestrial *Gasteropoda* have usually a distinct eyeball on the extremity of the superior tentacula, which Dr. Leidy has shown, in some of our species of *Helices*, to possess a crystalline lens and choroidea, with clear, consistent, vitreous humor. Cuvier and Lamarck considered the whole class of *Conchifera* to be devoid of eyes, but Poli has shown that in *Pecten varius*, Lin., the margin of the mantle is furnished with numerous eyes. These, according to Carpenter, are protected by a sclerotic coat with a transparent cornea in front, a layer of pigment, a crystalline lens and vitreous body, and a retinal expansion proceeding from an optic nerve. In the course of his observations, Mr. Lea became satisfied that the closing of the siphonal tubes, on his approach to the specimens he had in his vivarium, was not altogether occasioned by the vibration caused by his approach, and he accordingly arranged numerous individuals of several species with a view carefully to observe them. In the course of these examinations, repeatedly made, he found several species of *Unio* quite sensitive to his passing his hand between them and the light, while the *Margaritana margaritifera*, and *Anodonta undulata* and *A. lacustris*, Lea, showed no signs of sensitiveness. *Unio luteolus* and *U. ventricosus*, Bar., exhibited but little motion, while numerous specimens of *U. radiatus* invariably gave more or less sign when the interruption

of light took place. Some individuals were more sensitive than others, and the females exhibited this power much more than the males, often withdrawing not only their siphons, but their mantle within the valves.

It is difficult to say with certainty how far their visual organs are developed, as well also as to number and exact position. The fringes of the branchial and anal siphons are, in the *Uniones*, formed of small, subconical tentacula. These are larger in the branchial opening of the *Uniones*, while they do not exist at all in the anal opening of the *Anodontæ*. With a good lens the terminal point of the tentacula may be observed to be rounded and furnished with at least the appearance of an eye, and that it will prove to be a true eye, however imperfect, there can be but little doubt. Mr. Lea did not intend to pursue the minute anatomy of this organ; he left it to Dr. Leidy, who had done so much in the histology of the terrestrial Gasteropods, believing that he would be able to make out the complete anatomy of the eye in the *Unio*.

*Descriptions of Thirteen New Species of UNIONES, from Georgia.*

BY ISAAC LEA.

[Read Feb. 17th, 1857.]

*Hab.* Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

*UNIO CONCESTATOR.* Testâ lævi, ellipticâ, inflatâ, inæquilaterali, anticè rotundatâ; valvulis subcrassis, anticè crassioribus; natibus prominulis; epidermide nigricanti, eradiatâ, transversè striatâ; dentibus cardinalibus subcrassis, duplicitibus, crenulatisque; lateralibus longis subcurvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.

*Hab.* Creeks near Columbus, Georgia. Bishop Elliott.

*UNIO EXTENSUS.* Testâ lævi, valdè transversâ, valdè compressâ, ad latere planulatâ, valdè inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus prominulis, compressis; epidermidè tenebroso-fuscâ, transversè striatâ; dentibus cardinalibus subcrassis, acuminatis; lateralibus prælongis, rectis, posticè incrassatâ; margaritâ albâ et iridescente.

*Hab.* Dry Creek, near Columbus, Georgia. Bishop Elliott.

*UNIO PYRIFORMIS.* Testâ lævi, obliquâ, oviformis, valdè compressâ, valdè inæquilaterali, posticè biangulatâ; valvulis subcrassis, anticè crassioribus; natibus subprominentibus; epidermide luteo-castaneâ, nitidâ; dentibus cardinalibus subgrandibus crenulatisque; lateralibus subbrevis subcrassisque; margaritâ vel salmonis colore tinctâ vel albâ et iridescente.

*Hab.* Near Columbus, Georgia. Bishop Elliott.

*UNIO COLUMBENSIS.* Testâ lævi, oblongâ, subinflata, valdè inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus prominulis et concentricè undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus subgrandibus, elevatis, acuminatis crenulatisque; lateralibus prælongis, lamellatis subrectisque; margaritâ albâ et iridescente.

*Hab.* Creeks near Columbus, Georgia. Bishop Elliott.

*UNIO FALLAX.* Testâ lævi, ellipticâ, subinflata, inæquilaterali, anticè et posticè regulariter rotundatâ; valvulis subtenuibus; natibus prominulis, ad apicem minutè undulatâ; epidermide luteo-fuscâ, valdè radiatâ; dentibus cardinalibus erectis, compressis, acuminatis; lateralibus subrectis sublongisque; margaritâ vel albâ vel purpureâ vel salmonis colore tinctâ.

*Hab.* Streams near Columbus, Georgia. Bishop Elliott; and French Broad River, Tenn., Mr. Joseph Clark.

**UNIO INTERCEDENS.** Testâ lævi, ellipticâ, subinflatâ, valdè inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, posticè radiatâ, anticè subsulcatâ; dentibus cardinalibus parvis, angulatis, in utroque valvulo duplicitibus; lateralibus longis, lamellatis subrectisque; margaritâ purpureâ.

*Hab.* Streams near Columbus, Georgia. Bishop Elliott.

**UNIO EXCAVATUS.** Testâ lævi, subtriangulari, valdè inflatâ, subæquilaterali. posticè angulatâ; valvulis subcrassis, anticè crassioribus; natibus valdè prominentibus et tumidis; epidermide vel luteâ vel luteo-olivâ, politâ, radiatâ, anticè subsulcatâ; dentibus cardinalibus magnis, erectis, conico-compressis. crenulatis, in utroque valvulo duplicitibus; lateralibus subbrevibus, lamellatis crassisque; margaritâ albâ et iridescente.

*Hab.* Othcalooga Creek, Gordon County, Georgia; Bishop Elliott; and Etowah, Georgia, Rev. Geo. White. Alabama river, Claiborne, Alabama, Judge Tait.

**UNIO RADIANUS.** Testâ lævi, ellipticâ, subinflatâ, inæquilaterali, posticè rotundatâ; valvulis subtenuibus, anticè crassioribus; natibus prominulis, ad apices undulatis; epidermide luteâ, politâ, valdè radiatâ; dentibus cardinalibus subgrandibus, erectis, subconicis crenulatisque; lateralibus sublongis, lamellatis subrectisque; margaritâ vel albâ vel rosaceâ et valdè iridescente.

*Hab.* Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

**UNIO RUBELLINUS.** Testâ plicatâ, transversâ, subtriangulari, subinflatâ, valdè inæquilaterali, posticè acutè angulatâ, anticè rotundatâ; valvulis subcrassis, anticè crassioribus; natibus prominulis, ad apices undulatis; epidermide rubi-usculâ, nitidâ; dentibus cardinalibus parvis, erectis acuminatisque; lateralibus longis lamellatis subrectisque; margaritâ rubidâ et iridescente.

*Hab.* Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

**UNIO UMBROSUS.** Testâ lævi, ellipticâ, ventricosâ, subæquilaterali, posticè obtusè angulatâ, compressâ et emarginatâ; valvulis crassis, anticè crassioribus; natibus prominulis; epidermide tenebroso-fuscâ, posticè obsoletè radiatâ; dentibus cardinalibus subgrandibus, erectis, obtuso-conicis; lateralibus sublongis, subrectis subcrassisque; margaritâ tenebroso-purpureâ et iridescente.

*Hab.* Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

**UNIO APICINUS.** Testâ lævi, ellipticâ, subcompressâ, subæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus prominulis, ad apices regulariter et decorè undulatis; epidermide fusco-lutescente, radiis minutis induta;

dentibus cardinalibus parvulis, obliquis, compressis, subacutis crenulatisque ; lateralibus sublongis, lamellatis subcurvisque ; margaritā albida et iridescente.

*Hab.* Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

**UNIO OTHCALOOGENSIS.** Testa laevi, subtriangulari, ventricosa. subaequilaterali ; valvulis crassis, anticè crassioribus, natibus subgrandibus, ad apices undulatis ; epidermide lutescente, perlævi, nitida, eradiata ; dentibus cardinalibus crassis, obliquis, crenulatis et in utroque valvulo duplicibus : lateralibus brevibus subrectisque ; margaritā albā et iridescente.

*Hab.* Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

*Descriptions of Twelve New Species of NAIADES, from North Carolina.*

BY ISAAC LEA.

[Read March 10th, 1857.]

**Uxio WHEATLEYI.** Testâ lævi, quadratâ, subinflatâ, ad latere planulatâ, submarginatâ, valdè inaequilaterali; valvulis subcrassis; natibus prominentilis; epidermide tenebroso-fuscâ; dentibus cardinalibus curtis, subcrassis, in utroque valvulo duplicibus; lateralibus subcrassis, prælongis subrectisque; margaritâ vel albâ vel purpureâ et iridescente.

*Hab.* Catawba River, Gaston Co., N. C. C. M. Wheatley.

**UNIO PERCOARCTATUS.** Testâ lævi, quadratâ, valdè coarctatâ, ad latere planulatâ, valvulis tenuibus, posticè subbiangulatâ; natibus vix prominentibus, ad apices undulatis; epidermide tenebroso-fuscâ, minutè et valdè striatâ; dentibus cardinalibus parvis, striatis, in utroque valvulo duplicibus; lateralibus prælongis, lamellatis rectisque; margaritâ purpureâ et valdè iridescente.

*Hab.* Catawba River, Gaston Co., N. C. C. M. Wheatley and F. A. Genth, M. D.

**UNIO GRACILENTUS.** Testâ lævi, valdè transversâ, valdè compressâ, ad latere planulatâ, valdè inaequilaterali, posticè obtusè angulatâ; valvulis tenuibus; natibus vix prominentibus, ad apices undulatis; epidermide tenebroso-fuscâ, posticè obsoletè radiatâ; dentibus cardinalibus parvis, crenulatis, in utroque valvulo duplicibus; lateralibus prælongis, lamellatis rectisque; margaritâ cœruleo-albâ et valdè iridescente.

*Hab.* Catawba River, Gaston Co., N. C. C. M. Wheatley.

**UNIO MICANS.** Testâ lævi, ellipticâ, subcompressâ, valdè inaequilaterali, posticè angulatâ; valvulis subtenuibus, posticè crassioribus; natibus prominentilis; epidermide luteo-fuscâ, valdè radiatâ et valdè micante; dentibus cardinalibus parvis, compressis, erectis crenulatisque; lateralibus longis, lamellatis rectisque; margaritâ vel albâ vel salmonis colore tinctâ et valdè iridescente.

*Hab.* Catawba River, Gaston Co., N. C. C. M. Wheatley and F. A. Genth, M. D. Deep River, Gulf, N. C. Prof. Emmons.

**UNIO GENTHII.** Testâ lævi, obliquâ, inflatâ, inaequilaterali, posticè obtusè angulatâ; valvulis subcrassis, anticè crassioribus; natibus prominentibus; epidermide tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus subgrandibus, obtusè conicis crenulatisque; lateralibus crassis, curtis rectisque; margaritâ albâ et iridescente.

*Hab.* Catawba River, Gaston Co., N. C. C. M. Wheatley and F. A. Genth, M. D. Deep River, Gulf, N. C. Prof. Emmons.

*UNIO EMMONSII.* Testâ lævi, transversâ, subcompressâ, valdè inæquilaterali, posticè subbiangulatâ, ad latere planulatâ; valvulis subcrassis; natibus vix prominulis, ad apices undulatis, epidermide tenebroso-fuscâ, radiatâ, nitidâ; dentibus cardinalibus subgrandibus, compressis, crenulatis, in utroque valvulo duplicibus; lateralibus prælongis, lamellatis rectisque; margaritâ albâ et iridescente.

*Hab.* Roanoke River, Weldon, N. C. Prof. E. Emmons.

*UNIO SPADICEUS.* Testâ lævi, ellipticâ, subcompressâ, inæquilaterali, posticè subbiangulatâ, submarginatâ; valvulis subtenuibus, anticè crassioribus; natibus vix prominulis; epidermide spadicâ, eradiatâ; dentibus cardinalibus parvis crenulatisque; lateralibus sublongis subrectisque; margaritâ salmonis colore tinctâ et iridescente.

*Hab.* Deep River, Gulf, N. C. Prof. Emmons: and mountain streams, N. C. Joseph Clark.

*UNIO INSULSUS.* Testâ lævi, quadratâ, inflatâ, inæquilaterali, posticè obtusè angulatâ, at latere subplanulatâ; valvulis subcrassis; natibus prominulis, ad apices rugoso-undulatis; epidermide virido-fuscâ, insulse, striatâ, obsoletè radiatâ; dentibus cardinalibus parviusculis, subcompressis, in utroque valvulo duplicibus; lateralibus sublongis subcurvisque; margaritâ vel albâ vel purpureâ et iridescente.

*Hab.* Roanoke River, Weldon, N. C. Prof. Emmons.

*UNIO STRIATUS.* Testâ lævi, triangulari, subinflatâ, subæquilaterali, posticè angulatâ; valvulis subcrassis, anticè crassioribus; natibus elevatis, acuminatis, ad apices rugoso-undulatis; epidermide fuscâ, minutè striatâ, obsoletè radiatâ; dentibus cardinalibus parvulis, subcompressis, in utroque valvulo duplicibus crenulatisque; lateralibus brevibus, subcrassis rectisque; margaritâ vel albâ vel croceâ et iridescente.

*Hab.* Roanoke River, Weldon N. C. Prof. Emmons.

*UNIO MACER.* Testâ alatâ, lævi, obovatâ, compressissimâ, valdè inæquilaterali, posticè biangulatâ; vulvulis tenuibus; natibus parvis, acuminatis, ad apices undulatis; epidermide fuscâ, nitidâ, valdè radiatâ: dentibus cardinalibus parvis, tuberculatis; lateralibus prælongis, attenuatis, lamellatis subrectisque; margaritâ purpureâ, et iridescente.

*Hab.* Roanoke River, Weldon, N. C. Prof. Emmons.

*UNIO CONTRACTUS.* Testâ lævi, ellipticâ, valdè compressâ, valdè inæquilaterali, posticè rubrotundatâ; valvulis tenuibus; natibus depresso-depressis, ad apices undulatis; epidermide tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus parvis,

uberculatis; lateralibus longis, lamellatis rectisque; margaritâ vel albâ vel purpureâ et iridescente.

*Hab.* Roanoke River, Weldon, N. C. Prof. Emmons.

**ANODONTA VIRGULATA.** Testâ lœvi, ellipticâ, ventricosâ, inæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus prominulis, ad apices undulatis; epidermide vittata, virido-radiatâ; margaritâ cœruleo-albâ et iridescente.

*Hab.* Roanoke River, Weldon, N. C. Prof. Emmons: and Washington Co., Georgia. Rev. G. White.

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*Description of Six New Species of UNIONES, from Alabama.*

BY ISAAC LEA.

[Read March 24th, 1857.]

**UNIO PROPINQUUS.** Testâ subnodulosâ, obliquâ, subtriangulari, valdè inæquilaterali, ad latere sulcatâ; valvulis crassis, anticè crassioribus; natibus erectis, tumidis; epidermide vel luteâ vel viridi, radiatâ; dentibus cardinalibus subgrandibus, in utroque valvulo duplicibus; lateralibus percrassis, crenulatis, curtis subcurvisque; margaritâ albâ et iridescente.

*Hab.* Florence, Alabama, Rev. G. White and Tuscumbia, Alab., L. B. Thornton, Esq.

**UNIO FLORENTINUS.** Testâ lœvi, ellipticâ, subæquilaterali, ad latere paulisper planulatâ; valvulis crassis, anticè crassioribus; natibus tumidis, ad apices undulatis; epidermide luteo-olivaceâ, valdè radiatâ; dentibus cardinalibus subgrandibus, conicis, crenulatis, in utroque valvulo duplicibus; lateralibus curtis, crassis subcurvisque; margaritâ albâ.

*Hab.* Florence, Alabama. Rev. G. White. Cumberland River, Tenn., Drs. Troost and Edgar, and T. C. Downie, Esq., St. Simon's Island.

**UNIO BIEMARGINATUS.** Testâ lœvi, triangulari, inæquilaterali, posticè biangulatâ, ad latere sulcatâ, ad basim et posticè emarginatâ; valvulis sub-crassis, anticè crassioribus; natibus prominentibus, compressis; epidermidè rufo-fuscâ, valdè radiatâ; dentibus cardinalibus parvis, valdè crenulatis, sub-conicis, in utroque valvulo duplicibus; lateralibus curtis, crassis rectisque; margaritâ albâ et iridescente.

*Hab.* Florence, Alab. Rev. G. White.

**UNIO MUNDUS.** Testâ lœvi, obliquâ, tumida, posticè subangulatâ, valdè inæquilaterali; valvulis crassis, anticè crassioribus; natibus valdè elevatis, tumidis, retrorsis; epidermide vel luteâ vel luteo-fuscâ, maculatâ; dentibu

cardinalibus parvis, crenulatis, crompresso-conicis; lateralibus sublongis, crassis subcurvisque; margaritâ albâ et iridescente.

*Hab.* Tuscumbia, Alab. L. B. Thornton, Esq.

**UNIO THORNTONII.** Testâ lœvi, subrotundâ, tumidâ, ad latere paulisper planulatâ, ad basim compressâ, valdè inaequilaterali, anticè et posticè rotundatâ; valvulis crassis; natibus valdè elevatis, tumidis, retrorsis; epidermide rufo-fuscâ, maculatâ; dentibus cardinalibus crassis crenulatisque; lateralibus percrassis subcurvisque; margaritâ albâ et iridescente.

*Hab.* Tuscumbia, Alab. L. B. Thornton, Esq.

**UNIO MOORESIANUS.** Testâ lœvi, subtriangulari, tumidâ, ad latere planulatâ, ad basim compressâ, posticè subangulatâ, valdè inaequilaterali; valvulis crassis, anticè crassioribus; natibus valdè elevatis, tumidis, retrorsis; epidermide rufo-fuscâ, maculatâ; dentibus cardinalibus crassis, obtuso-conicis, crenulatis, in utroque valvulo duplicitibus; lateralibus crassis subrectisque: margaritâ albâ et iridescente.

*Hab.* Tuscumbia, Alabama. H. Moores.

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*Description of Eight New Species of NAIADES, from various parts of the United States.*

BY ISAAC LEA.

[Read March 24th, 1857.]

**UNIO PINGUIS.** Testâ lœvi, ellipticâ, inflatâ, valdè inaequilaterali; valvulis subcrassis; natibus prominentibus, retrorsis; epidermide luteâ, obscurè radiatâ et politâ; dentibus cardinalibus subgrandibus, in utroque valvulo duplicitibus, acuminatis crenulatisque; lateralibus magnis, lamellatis, longis curvisque; margaritâ albâ et iridescente.

*Hab.* St. Peter's River, Upper Mississippi. B. W. Budd, M. D.

**UNIO HIGGINSII.** Testâ lœvi, obliquâ, ventricosâ, valdè inaequilaterali, anticè rotundatâ; valvulis percrassis; natibus valdè prominentibus, tumidis incurvisque; epidermide virido-olivâ, politâ, valdè radiatâ; dentibus cardinalibus magnis, crassis, erectis, crenulatis, in utroque valvulo duplicitibus; lateralibus sublongis, percrassis subrectisque; margaritâ vel albâ vel salmonis colore tinctâ.

*Hab.* Muscatine, Iowa. Frank Higgins.

**UNIO ABBEVILLENSIS.** Testâ lœvi, oblongâ, subinflatâ, ad lateris planulatis, valdè inaequilaterali, posticè biangulatâ; valvulis crassis; natibus prominulis; epider-

mide brunneâ, striatâ ; dentibus cardinalibus magnis, crassis, in utroque valvulo duplicibus ; lateralibus prælongis, lamellatis subcurvisque ; margaritâ vel albâ vel salmonis colore tinctâ.

*Hab.* Abbeville District, South Carolina. J. P. Barratt, M. D.

**UNIO JAMESIANUS.** Testâ lævi, ellipticâ, compressâ, valdè inæquilaterali, posticè valdè compressâ, ad basim emarginatâ ; valvulis subcrassis ; natibus prominulis, ad apicem concentraliter undulatâ ; epidermide luteâ, politâ ; dentibus cardinalibus compressis, crenulatis ; lateralibus longis, lamellatis valdè curvisque ; margaritâ albâ et iridescente.

*Hab.* Jackson, Mississippi. U. P. James.

**UNIO TEXASIENSIS.** Testâ lævi, ellipticâ, subcompressâ, valdè inæquilaterali, posticè subangulatâ ; valvulis subtenuibus, anticè crassioribus ; natibus prominulis, ad apices pereleganter et subconcentricè undulatis ; epidermide tenebroso-olivâ, politâ, obsoletè radiatâ ; dentibus cardinalibus parvis, compressis, erectis crenulatisque ; lateralibus longis, lamellatis subcurvisque ; margaritâ cœruleâ et valdè iridescente.

*Hab.* Dewitt County, Texas. W. Newcomb, M. D.

**ANODONTA LEWISII.** Testâ lævi, ellipticâ, subventricosâ, inæquilaterali, posticè obtusè angulatâ, anticè rotundatâ ; vulvulis subtenuibus ; natibus prominulis, ad apices rugoso-undulatis ; epidermide tenebroso-olivaceâ, eradiatâ ; margaritâ cœruleo-albâ et iridescente.

*Hab.* Erie Canal and Mohawk River, Herkimer Co., N. Y. James Lewis, M. D. : and Genesee River, below Rochester. Prof. C. Dewey.

**ANODONTA LACUSTRIS.** Testâ lævi, transversâ, subinflatâ, valdè inæquilaterali, posticè subangulatâ ; valvulis tenuibus ; natibus prominulis, ad apices crebri undulatis ; epidermide luteo-olivaceâ, eradiatâ, transversè vittatâ ; margaritâ vel albâ vel croceâ et iridescente.

*Hab.* Crooked Lake and Little Lakes, New York. James Lewis, M. D.

**ANODONTA MODESTA.** Testâ lævi, ellipticâ, subinflatâ, valdè inæquilaterali, subemarginatâ, anticè obtusè angulatâ ; valvulis subcrassis, posticè crassioribus ; natibus subprominentibus, ad apices undulatis ; epidermide olivaceâ, transversè vittatâ et obsoletè radiatâ ; margaritâ argenteâ et valdè iridescente.

*Hab.* Pond near Kalamazoo, Mich. J. Lewis, M. D.

*Descriptions of Three New Exotic Species of NAIADES.*

By ISAAC LEA.

[Read March 24th, 1857.]

**UNIO POEYANUS.** Testâ lævi, transversâ, subcylindraceâ, ad basim subemarginatâ, valdè inæquilaterali, ad latere plânulatâ, posticè truncatâ et subbiangulatâ; valvulis subcrassis; natibus prominulis, ad apices simplicibus; epidermide luteolâ; dentibus cardinalibus subcompressis, accuminatis crenulatisque; lateralibus prælongis, lamellatis rectisque; margaritâ luteolâ et iridescente.

*Hab.* Rio de las Balsas, near Coyucan, Mexico. Prof. Poey of Havanna.

**UNIO CANADENSIS.** Testâ lævi, triangulari, subcompressâ, inæquilaterali, posticè obtuse angulatâ; valvulis subcrassis, antice crassioribus; natibus subprominentibus; epidermide luteâ, posticè radiatâ; dentibus cardinalibus parvis, erectis crenulatisque; lateralibus longis, curvis lamellatisque; margaritâ albâ et iridescente.

*Hab.* St. Lawrence River, near Montreal. M. Carey Lea.

**ANODONTA HOLTONIS.** Testâ lævi, oblongâ, inflatâ, valdè inæquilaterali, e natibus lineatis; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-olivaceâ, striatâ; margaritâ cœruleâ et iridescente.

*Hab.* Near Cartago, New Granada, S. A. Rev. J. F. Holton.

*Description of Six New Species of Fresh Water and Land Shells of Texas and Tamaulipas, from the Collection of the Smithsonian Institution.*

By ISAAC LEA.

(Read April 7th, 1857)

UNIO BERLANDIERII. Testā lævi, subellipticā, inflatā, posticē subrotundatā, inaequilaterali; valvulis crassis, anticē crassioribus; natibus grandibus, elevatis tumidis, ad apices minutē undulatā; epidermide micans, tenebroso-fuscā, obsoletē radiatā; dentibus cardinalibus magnis, erectis, subcompressis, valdē crenulatis et in utroque valvulo duplicibus; lateralibus longis, crassis, subcurvis lamellatisque; margaritā vel purpurascente vel salmonis colore tinctā et iridescente.

*Hab.* Matamoras, Tamaulipas, Mexico. Luis Berlandier, M. D.\*

UNIO POPEI. Testā lævi, transversā, compresso-cylindraceā, ad basim subemarginatā, valdē inaequilaterali, ad latere planulatā, posticē truncatā; valvulis subtenuibus, anticē crassioribus; natibus parvis, prominulis, ad apices granulatis; epidermide vel tenebroso-olivā vel fuscā, obsoletē radiatā; dentibus cardinalibus compressis, erectis, acuminatis crenulatisque; lateralibus prælongis, lamellatis subrectisque; margaritā vel albā vel salmonis tinctā et iridescente.

*Hab.* Devil's River and Rio Salado, Texas. Capt. Pope, U. S. A.

UNIO BAIRDIANUS. Testā lævi, ellipticā, paulisper inflatā, postice compressā, valdē inaequilaterali; valvulis subtenuibus, posticē crassioribus; natibus prominulis, ad apices concentricē undulatis; epidermide tenebroso-fuscā, obsoletē radiatā; dentibus cardinalibus parvis, erectis, acuminatis crenulatisque; lateralibus longis, lamellatis subcurvisque; margaritā albā et valdē iridescente.

*Hab.* Devil's River, Texas. Capt. Pope, U. S. A.

ANODONTA HENRYANA. Testā lævi, oblongā, inflatā, ad basim et anticē compressā, subæquilaterali, posticē truncatā; valvulis pertenuibus; natibus depressis, planulatis, ad apices minutē et irregulariter undulatā; epidermide nitidā, vel luteā vel luteo-viridi, obsoletē radiatā, et vittatā; margaritā cœruleo-albā et valde iridescente.

*Hab.* Matamoras, Tamaulipas, Mexico. L. Berlandier, M. D.

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\* The collection made by Dr. Berlandier was purchased by Lieut. D. N. Couch, U. S. A., and liberally presented to the Smithsonian Institution.

HELIX (POLYGYRA) COUCHIANA. Testâ supernè paulisper elevatâ, subplanulatâ, infernè subinflatâ; nitidâ, albidâ, longitudinaliter et subtiliter striatâ, minutè perforatâ; anfractibus quinis; aperturâ rotundatâ, quinquedentatâ; labro subacuto.

*Hab.* Texas. L. Berlandier, M. D.

HELIX (POLYGYRA) TAMAULIPASENSIS. Testâ supernè paulisper elevatâ, subplanulatâ, infernè subinflatâ, nitidâ, albidâ, longitudinaliter et subtiliter striatâ, minutè perforatâ; anfractibus quinis; aperturâ lunatâ, tridentatâ; labro spissato, reflexo.

*Hab.* Texas. L. Berlandier, M. D.